CLAIMS

What is claimed is:

1. A Multi-level Analog Signaling (MAS) method where each transmitted symbol encodes at least two data bits, comprising encoding data bits into symbols represented by multi-level analog signals; and, when the data bits to be encoded are the same as the data bits encoded for an immediately prior symbol, encoding instead a strobe signal represented by a predetermined one of the levels of the multi-level analog signal, where the presence of the strobe signal at a receiver is used to generate clock edges.

2. A method as in claim 1, where the multi-level analog signal comprises a PAM-5 signal, where four analog signal levels convey the encoded data bits and one analog signal level conveys the strobe signal.

3. A method as in claim 1, where for a case where there are more than two consecutive repeats of the at least two data bits, further comprising alternating between outputting a predetermined one of the levels of the multi-level analog signal that represents the corresponding symbol, and the predetermined one of the levels of the multi-level analog signal that represents the strobe signal.

4. A Multi-level Analog Signaling (MAS) circuit arrangement where each transmitted symbol encodes at least two data bits, comprising: an encoder for encoding data bits into symbols represented by multi-level analog signals, said encoder being responsive to a condition wherein the data bits to be encoded are the same as the data bits encoded for an immediately prior symbol, for encoding instead a strobe signal represented by a predetermined one of the levels of the multi-level analog signal, where the presence of the strobe signal at a receiver is used to generate clock edges for sampling the received signal.

5. A MAS circuit arrangement as in claim 4, where the multi-level analog signal comprises a PAM-5 signal, where four analog signal levels convey the encoded data bits

and one analog signal level conveys the strobe signal.

6. A MAS circuit arrangement as in claim 4, where said encoder is further responsive to a condition where there are more than two consecutive repeats of the at least two data bits, for alternating between outputting a predetermined one of the levels of the multi-level analog signal that represents the corresponding symbol, and the predetermined one of the levels of the multi-level analog signal that represents the strobe signal.

7. A Multi-level Analog Signaling (MAS) circuit arrangement where each received symbol encodes at least two data bits, comprising: a decoder and clock recovery circuit for decoding received symbols represented by multi-level analog signals into data bits, said decoder and clock recovery circuit being responsive to a receipt of a strobe signal, represented by a predetermined one of the levels of the multi-level analog signal condition, for generating sampling clock edge transitions and data bits that are the same as the data bits decoded for an immediately prior received symbol.

8. A MAS circuit arrangement as in claim 7, where the multi-level analog signal comprises a PAM-5 signal, where four analog signal levels convey encoded data bits and one analog signal level conveys the strobe signal.

9. A MAS circuit arrangement as in claim 7, where said decoder and clock recovery circuit are further responsive to a receipt of alternating occurrences of a predetermined one of the levels of the multi-level analog signal that represents a corresponding symbol, and the predetermined one of the levels of the multi-level analog signal that represents the strobe signal, for generating sampling clock edge transitions and multiple instances of the same data bits.

10. A mobile station comprising a plurality of sub-assemblies coupled together by a plurality of data communication buses connected to ports, where at least one port comprises a Multi-level Analog Signaling (MAS) transmitter circuit arrangement where each transmitted symbol encodes at least two data bits, comprising: an encoder for encoding data bits into symbols represented by multi-level analog signals, said encoder

being responsive to a condition wherein the data bits to be encoded are the same as the data bits encoded for an immediately prior symbol, for encoding instead a strobe signal represented by a predetermined one of the levels of the multi-level analog signal, and where at least one port comprises a MAS receiver circuit arrangement comprising a decoder and clock recovery circuit for decoding received symbols represented by the multi-level analog signals into data bits, said decoder and clock recovery circuit being responsive to a receipt of the strobe signal for generating sampling clock edge transitions and data bits that are the same as the data bits decoded for an immediately prior received symbol.

11. A mobile station as in claim 10, where the multi-level analog signal comprises a PAM-5 signal, where four analog signal levels convey the encoded data bits and one analog signal level conveys the strobe signal.

12. A mobile station as in claim 10, where for a case where there are more than two consecutive repeats of the at least two data bits, the encoder toggles between outputting a predetermined one of the levels of the multi-level analog signal that represents the corresponding symbol, and the predetermined one of the levels of the multi-level analog signal that represents the strobe signal.

13. A mobile station as in claim 10, where one of the sub-assemblies comprises a cellular engine.

14. A mobile station as in claim 13, where another one of the sub-assemblies comprises a display.

15. A mobile station as in claim 13, where another one of the sub-assemblies comprises a camera.

16. A mobile station as in claim 13, where said cellular engine is coupled to circuitry external to said mobile station via another port and bus.